

**Remarks**

Reconsideration and allowance of this application, as amended, are respectfully requested.

The written description portion of the specification and the claims have been amended. Claims 1-18 remain pending in the application. Claim 1 is independent. The rejections are respectfully submitted to be obviated in view of the amendments and remarks presented herein. No new matter has been introduced through the foregoing amendments.

The specification has been editorially amended for conformance with 37 CFR § 1.77(c), for consistency, and to correct any informalities. The claims have been amended to overcome the rejection under 35 U.S.C. § 112, and in general to more fully comply with U.S. practice. Entry of each of the amendments is respectfully requested.

35 U.S.C. § 102(b) – Baumgartner

Claims 1-12, 14, and 15 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,123,286 to Baumgartner.

The rejection of claims 1-12, 14, and 15 under § 102(b) based on Baumgartner is respectfully traversed. For at least the following reasons, the disclosure of Baumgartner does not anticipate Applicants' claimed invention.

The present invention concerns a set-up to accurately determine the transit time of an ultrasonic signal where the time resolution defined by sampling time periods  $\Delta t$  shall be enhanced. It is quite evident that in this case there are no signals available between the sampled signals. The present invention provides a solution to this problem.

In Baumgartner, on the other hand, the starting point is entirely different. Here the trace of an analog signal is analyzed, but there is *no sampling* in the sense of the present invention, i.e., the problem underlying the present invention is not even mentioned in Baumgartner.

Even assuming there was any sampling taking place in Baumgartner, the time periods  $\Delta t$  would apparently be so small that a quasi-continuous signal would result, where again the problem underlying the present invention would not appear. In Baumgartner the *analog* output signal is instead analyzed in view of a plurality of zero-level crossing  $T_A$ ,  $T_B$ ,  $T_C$  and  $T_D$  and a plurality of peak values  $V_A$ ,  $V_B$ ,  $V_C$ ,  $V_D$ . An envelope line is determined which is then used to derive the pulse transit time of the propagated pulse.

Looking at Fig. 3 of the present application it is evident that the concept of Baumgartner would not work with signals sampled at fixed time intervals where only discrete points in a signal-time diagram appear. Zero-crossing and peak values would only be hit by coincidence. The person skilled in the art would therefore not know how to enhance the time resolution below the

sampling time interval by using the method of Baumgartner. Therefore, Baumgartner cannot even render the present invention obvious. For the sake of completeness, it is also clear that Baumgartner does not disclose a line carrying a medical liquid.

Since Baumgartner does not meet each feature of the claimed invention, Baumgartner does not anticipate the invention defined by Applicants' instant claim 1. Claims 2-12, 14, and 15 are allowable because they depend, either directly or indirectly, from claim 1, and for the subject matter recited therein.

35 U.S.C. § 103(a) – Baumgartner and Jahn

Claims 13 and 16-18 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Baumgartner in view of U.S. Patent No. 6,542,761 to Jahn et al. (hereinafter "Jahn").

The rejection of claims 13 and 16-18 under § 103(a) based on Baumgartner and Jahn is also respectfully traversed. Regardless of what Jahn may disclose with regard to air detection or pressure monitoring, the disclosure of Jahn does not rectify any of the above-described deficiencies of Baumgartner.

Accordingly, the combined disclosures of Baumgartner and Jahn would not have rendered obvious the invention defined by Applicants' claims 13 and 16-18.

In view of the foregoing, this application is now in condition for allowance. If the examiner believes that an

U.S. Appln. No.: 10/568,830  
Atty. Docket No.: P71027US0

interview might expedite prosecution, the examiner is invited to contact the undersigned.

Respectfully submitted,

JACOBSON HOLMAN PILC

By: *Harvey B. Jacobson Jr.*  
Harvey B. Jacobson, Jr.  
Reg. No. 20,851

400 Seventh Street, N. W.  
Washington, D.C. 20004  
Telephone: (202) 638-6666  
Date: February 11, 2009